

QUANTA

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INFORMATION ON THE GROUP

Membership of QUANTA (QL Users and Tinkerers Association) is by subscription to QUANTA, the group's newsletter, which is published monthly. Membership details are obtainable from the secretary. Membership of the group is open to anyone with an interest in the Sinclair QL microcomputer.

Members requiring assistance with problems related to the QL may write to or phone the secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops will be arranged from time to time in various parts of the country.

The group maintains a software library. Most of the programs are free to members. A library list will be published from time to time. Programs are obtainable from the sub-librarians.

A list of members in any particular area is obtainable from the secretary.

Please send all contributions to the newsletter to the editor.

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NOTES FOR CONTRIBUTORS TO QUANTA

Quill files on Microdrive cartridge or 40 track disk (single or double sided), are preferred. Cartridges and disks will be returned ASAP. Printed or hand-written material is acceptable, of course.

Short programs can be included, but lengthy programs should be placed in the library, and a description sent in for the newsletter

Diary News

EDITORIAL

I could do with a few more helpers on our stand at the PCW Show - please give me a ring if you are able to help and haven't already contacted me.

The problem with the 8056 printer mentioned in the last issue - people can't get it to work with Easel - is due to the fact that the printer in question can't handle graphics, or so I've been told!

I've just heard that US distributor, A+ Computer Response, is trying to buy the QL rights from Amstrad.

The Cambridge workshop, held on Sunday 27 July at the University Arms Hotel, was extremely successful. About 80 members attended. Tony Tebby did a session lasting about two hours on the QLT machine. After lunch, David Oliver of CST discussed the Thor machines, followed by Ian Stewart talking about his SuperBASIC compiler. I then did a session on CAD and the new Talent TechniQL package. Syd Day turned up with the library, and was kept very busy supplying members with library list updates and items from the library.

My thanks to those of you who answered my plea for a "shrink" program, in the last issue. I think I've had four letters on the topic.

Leon Heller

MEMBERS' LETTERS

I hope QUANTA may provide additional information, or reference to publications to supplement Dickens. I would like to have fuller details of hardware and the mapping to I/O locations from \$18000. Also, exact information about scheduling and memory management would be interesting. What is really needed is an annotated ROM disassembly, promised by one publisher two years ago, but as far as I know never materialising. In theory one could do it oneself, but I must confess I found it hard work to deal with the first few hundred bytes when writing the "shrink" program.

Leslie Hammerton,
3, Piercefield Road,
Freshfield,
Formby,
Merseyside L37 7DG.

You asked in the July issue about a "shrink" program, to make an unexpanded QL emulate an unexpanded machine. The latest version of the Qconnect software supplied with the Tandata modem does this, and I have stripped the relevant code out of their Boot routine and used it successfully with programs such as Zkul.

Diary
NEWS

I have recently started using the Prospero FORTRAN 77 compiler, but am stuck at the moment because of a bug in the compiler associated with the passing of variably dimensioned arrays via ENTRY points in subroutines. Prospero agree that it is a bug, and have promised me a fix "in about a couple of weeks" . If they can meet this promise, I will be very impressed: their handling of the problem so far has certainly been professional. If it would be of interest, I will write this up for the Newsletter when the problem has been resolved.

Jeremy M. Hutson,
Pembroke College,
Cambridge,
CB2 1RF.

PROBLEM SECTION

I would like to contact QUANTA members interested in chemistry software for the QL. I have some programmes which I will put in the library when they are debugged. They are compiled with Supercharge.

I'm thinking of translating some BASIC software (e.g. Project Seraphim) for the QL. I need to know where I can find chemistry software in FORTRAN or Pascal for adapting to the QL.

E, de Jesus Alcaniz,
Departamento de Quimico Inorganica,
Universidad de Alcala de Henares,
Madrid,
Spain

We have been trying out networking between our QLs, with success for SuperBASIC programs. Many thanks to QUANTA 1.12 page 24. We would like to link the while using Quill as I have a dot matrix printer and my brother has a daisy wheel. We would like to be able to send a document to the other computer when required, so that the printer driver is set up for the relevant printer, which can also act as a spooler. We can only manage networking when not using Quill.

Are there any books available which have detailed information on networking? We would like to know if it is possible to run a program/game which is played on both machines at the same time rather than just transfer a listing from one QL to the other.

Giles Powell,
53, Richford Street,
London W6 7HJ

/* You could try printing documents to files, leaving Quill and then copying the files to the appropriate printer, via the network and spooling software. Tony Tebby's Toolkit II documentation (section 23.3) mentions using the network (enhanced with the additional Toolkit functions) with Quill - has anyone tried this? LFH */

On my behalf, my brother had a go at the RAM expansion described in the Jan. Issue, but there is an intermittent fault in the added memory (probably a poor connection somewhere). He has now had to return to Saudi Arabia, leaving me a partly functional machine. Can anyone sort out the problem for me?

Jonathan M. Spencer,
32, Grays Road,
Grangefield,
Stockton-on-Tees,
Cleveland TS18 4LX.
Tel: (0642) 6 7174

Some of my friends have problems with "faulty" ULAs that do not become apparent until they try to upgrade to 640K. In one case it is definitely a heat problem when his QL locks up after about two hours. Do you know where he can get a new ULA?

By the way, I battery-powered the battery ULA to preserve the correct time and date. This works in many cases, but it isn't completely satisfactory since on power-on, "spikes" might reset the clock to Jan 1961. Any ideas on how to overcome the problem?

Wolfgang Schroder,
Graefstrasse 18.
1000 Berlin 61,
West Germany.

/* Replacement URLs are available from:-

Dennis Briggs,
53, Gilpin Road,
Admaston,
Telford,
Shropshire.
Tel: (0952) 55895.

The URL might not be faulty. It could be that the increased load on the power supply is causing the 5V line to drop in voltage, which could cause the malfunction.

The problem with the real-time clock is the reason why Sinclair decided not to remove the battery back-up. A proper clock add-on circuit and EPROM are available from Bruce Marriott - described in this issue. LFH * /

Recently I bought a 256K Sandy SUPERQBOARD from Farmintel Ltd., hoping to expand it to 512K with some spare memory chips I had . I plugged the chips into the vacant sockets on the board , connected everything up and switched on.

How much expansion RAM did I now have? 256K. It seems that on the Sandy SUPERQBOARD the total amount of expansion RAM available is decided by a PAL 1618ACN chip, depending upon how the chip has been programmed.

The main question is, can these chips be user-programmed like PROMS, and if so, how? I don't really want to pay for an upgrade to 512K when I already have the memory chips. If it is possible to program these chips, then where can you get them? I could quite easily build a manual programming circuit. Concerning QUANTA, I for one would be interested in seeing more electronic designs for interfaces etc.

How good is Talent's new CAD Package? I was thinking of buying this program, until I found out that it was copy-protected. It really is irritating to have to find and remove the copy-protection from these programs in order to run them solely from disk. I recently removed the protection from Pyramide's WANDERER Game (I won't say how of course!) And I have to admit, it is quite a good game when you don't have to search for the KEY Microdrive each time. With Digital Precision's SUPERCHARGE, I feel that the only thing that makes it unprofessional is the awful LENSLOK system. When you have to recompile a program a few times, making small changes, it becomes very annoying and time-wasting. Perhaps the new library compiler will remove these problems. Does anyone know how to convert Magnetic Scroll's PAWN program to disk? It appears to read direct sectors from the Microdrive, bypassing the normal filing system.

D. J. Webster,
6, Cudnall Street,
Charlton Kings,
Cheltenham,
Glos.

/* PALs are quite easy to get hold of. Programming them is a bit trickier than EPROMS - you need a special programmer which wouldn't be all that difficult to make. The main problem is finding out the program used by Sandy - there is a special security link on most PALs and if this has been blown it is very difficult, if not impossible, to copy them. If you ask them nicely, Sandy might sell you a PAL on it's own - It's worth trying. LFH */

Have any members had experience of the Silver Reed OM50 printer/plotter - In the shop it would not work with the QL + Transform interface?

I am urgently waiting for a database file merge utility - any signs of one yet?

Will the Digital Precision Super Media Manager allow BBC disks to transfer to QL disks?

David Stidwill,
48, Church Street,
Tamworth B79 7DE.

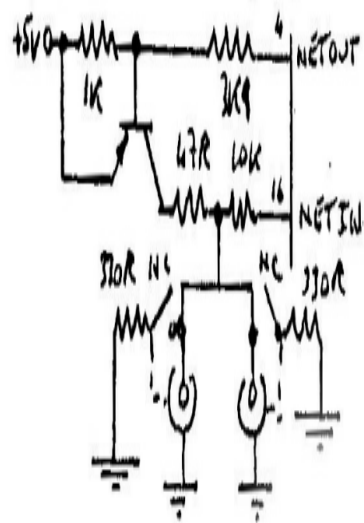
128K ROM CARD

Here is another hardware project that might interest members.

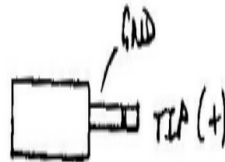
In order to utilise at least half of the 256K left for peripheral I/O , I designed this circuit which addresses 128K of EPROM in banks of 32K. To take full advantage of this, 32K EPROMS should be used. Of course, smaller EPROMs can be used, and even mixed.

For those who have disk interfaces, it is a good idea to mount the EPROM Board on top of the disk interface, making all connections via flat ribbon cable. In fact, I moved the disk interface EPROM to the new board, as well. Unfortunately the new ROM is not automatically recognised by QDOS on power-on, due to a bug in version JM. But with version JS you get all the extensions at a keystroke.

Schematic of the network port:-



Jack polarity:-



Wolfgang Schroder,
Graefstrasse 18,
1000 Berlin 61,
West Germany.

REVIEW OF COMPWARE 128k BOOT PROGRAM

As a result of my request in the last issue for a program to make a QL with memory expansion look like a standard 128K machine, Mark Hughes of Compware sent me a copy of their program which does just this.

The program is supplied on cartridge and is easily configured to work from disk. Comprehensive instructions are provided in the form of a Quill file.

To use it, a copy (the cartridge is not copy protected) is placed in MDV1_ and the machine reset. F1 or F2 are then pressed as usual, and the machine now thinks it only has 128K. It then resets itself, and when F1 or F2 is pressed a second time, a menu is displayed, enabling you to insert your program cartridge and run a program with LRUN, EXEC_w or EXEC. Another option enabling a boot program to be run is also provided.

I didn't have any software that only runs in 128K, but Quill seemed to work OK in the re-configured machine so I don't foresee any problems. Typing "print free_mem with the Toolkit ROM in place indicated that only 128K of RAM appeared to be present.

The price of £4.99 is very reasonable. However, QUANTA members now have some free programs (see below) in the software library that do essentially the same thing, perhaps a bit less conveniently. The Compware program is ideal for non-QUANTA members of course.

Leon Heller.

"SHRINK" PROGRAM

A few notes about the "Shrink" program I wrote. It's ver\$ specific, so there are different files on the cartridge for different machines, and two types of shrink for each. Type 1 should, but doesn't, work with JMs and maybe others. The principle used for the Shrink is straightforward and the problem lies, I think, with SuperBASIC. I have a JS, so obviously I managed to get it to work OK on that.

Type 2 shrinks are less neat, but so far as I know work OK on other machines. The program is so simple it would not be difficult for anyone with knowledge of assembler to rewrite if their QL ver\$ isn't supported - as I say, I'm really only sure this works for

JSs and JMs at the moment, since these are the only machines I've been able to check it up on. All the necessary files and information are included.

Alasdair MacDonald
Wildfield House,
Clenchwarton,
King's Lynn,
Norfolk PE34 4AH.
Tel:- (0553) 772332

ANOTHER "SHRINK" PROGRAM

I Wrote recently about a shrink program, and you appealed for details in your July editorial

I have now solved this problem and enclose the listing. It is really very simple, but originally I suffered much travail through failing to realise that I must set the interrupt mask.

This program works on my AH machine, but it is possible that the required jump address may be different in later ROMs. In my ROM the initial PC (second long word) is \$168. Shortly after this there is a routine to find RAMTOP and the BNE.S (in my case at \$174) gives the appropriate address for the jump (\$183).

Incidentally, a presumably similar program is now being offered by Compware for £4.99.

The old version of Zkul will still not run on the shrunken system if the Toolkit ROM is present. This because of the memory required in BASIC for the extras, resulting required in BASIC for the extras resulting in FREE_ MEM of -512 after RESPR (85400). There is of course no problem with the new version of Zkul used with expanded memory.

Shrink_bas

```
100 a = RESPR(500)
110 LBYTES mdv2_shrink_cde, a
120 CALL a
```

Shrink_cde

0007FE00	4E40	TRAP	£\$00
0007FE02	46FC2700	MOVE	£\$2700,SR
0007FE06	227C00040000	MOVEA.L	£\$00040000,A1
0007FE0C	2849	MOVEA.L	A1,A4
0007FE0E	4EF80182	JMP	\$00000182

Leslie Hammerton,
3, Piercefield Road,
Freshfield,
Formby,
Merseyside L37 7DG.

QUILL PROBLEM

A member recently contacted me about a problem with Quill - a two page document gave an "out of memory" message when an attempt was made to load it, even though the machine had additional memory. When I examined the document, I found that it consisted of names and addresses all on separate lines. Quill considers each new line to be a paragraph, and Psion have told me that there is a restriction on the number of paragraphs in a document which limits the maximum document size, rather than the number of characters, even with additional memory.

I advised writing a simple SuperBASIC program to maintain the list and print it out. Archive could also be used, and is probably a better solution.

PASSING PARAMETERS TO PROGRAMS

Has anyone thought of the following:-

```

2000 DEFine PROCedure e(file)
2010 fln$ = PARSTR$ (file,1)
2020 start$ = "flp2_" & fln$ & "_c" & CHR$(10) & "50K" & CHR$(10) & "N" &
CHR$(10)
2030 EX flp1_q_start
2040 EW flp1_ed
2050 END DEFine e

```

PARSTR\$ is from the QJump SUPERTOOLKIT, and uses the argument of the procedure as a string, q_start is from the QL User Magazine (I can't remember which edition), and was originally used to set up defaults when booting Quill. It takes the string start\$, and feeds it into the currently active console. Ed is the Metacomco editor.

So, for example, when I want to edit one of my C source programs on flp2_, I simply type E myfile (without any quotes) and this sets up editor to edit the file without having to type in all the boring details. Perhaps one day Metacomco will upgrade their editor to be useable as an EX program, passing the filename etc. in the command line. Maybe they will even fix the block-mark bug. Meanwhile, I find this procedure very useful. I also use the PARSTR\$ function in my C compiler control program, so to compile and link a program, I only need to type C myfile, or to produce a library file, LIB myfile. I hope this is some use to someone.

D. J. Webster,
6, Cudnall Street,
Charlton Kings,
Cheltenham,
Glos.

CRAZY QUILL

No doubt I have been spoiled by having extensively used a "proper" word processor and I accept the view that unnecessary knocking of the system is counter-productive but I have boiled internally at the absurd shortcomings of Quill too long to continue to keep it bottled up. I would like to think that Psion were to explain their point of view; I am sure that there must be another side to the story. Quill came bundled with the QL and the real cost to the user and the return to Psion must be very low so there would be some excuse for a no frills approach but this does not seem to be the problem; it has considerable pretensions and we are told that the Xchange suite of programs by Psion, which cost a considerable sum, use much of the same code and use the same philosophy. Has any member any experience of this suite and can give us a comparison?

My criticisms are on two basic levels, the choice of defaults and the slowness and clumsiness of the functions.

Almost every default appears to have been chosen by a programmer to demonstrate how clever it was rather than how useful. It could never have been sampled by a typist familiar with present day standards of setting out, the choices are just too bizarre. A wp to be bundled with a low-cost system should assume that the user may wish to use it to write letters and most letters do not exceed a single page. The default margins are totally unsuited to this task (or to any other task in my opinion). The end result would look unsatisfactory due mainly to the indent margin being set differently from the left margin. The user positions the paper in the printer where he wishes it to start only to find six line feeds creep in to frustrate him. He does not require a number at the foot of the page and who on earth chooses the number to read "page n"? I have unwittingly been caught several times when wishing to prove quickly what the print driver will do with a few special trial characters to have to whisk the paper out after printing them and print "page 1" on the platen! I use the following defaults which I have set up in a blank (no text) file I call dummy and which I load, and subsequently rename, for almost any document. They may not be ideal for your use but they must be better than Psion's choice.

Upper margin 0
Bottom margin 0
Left margin 0
Indent margin 0
Right margin 79
Tab stops centring tab at 39, right aligned at 79
Footer none
Page length 0

Other defaults are unchanged but I do not find that the selection of F1 for monitor when booting puts me into 80 column display and I have to change the Display menu from the 64 column mode. I find I can position the paper in the printer to produce a satisfactory left margin without losing useful screen space by specifying positive value for same and why would the TV user want his printed output to be different from a monitor user?

When I save the document to mdv_, which I do frequently partly because of the ,lock-up problem, why does it assume I do not wish to continue the document and make me wait for ages while it deletes the def_temp and then wait again while it re-writes it if I indicate that I do? Why does it expect "y" in answer to the question "overwrite?" And assume the answer "Y" to the next question "same document?" To mean "NO"?

But these are all absurdities which we can side-step with a little experience and cunning. The less acceptable features are the absurd slowness of character, word and block deletions. They could not be slower if they used a BASIC FOR/NEXT loop and one repeatedly finds that by the time the system has caught up with the user's key strokes a good deal of unintended deletion has been made. Printing of text on screen is also no better than the speed of a BASIC program. To move to the beginning or end of a document on a "proper" wp is usually one key stroke and if you blink, you will not see the screen refresh. It is virtually instantaneous but Quill lumbers along clearing each line and printing each line in it's own sweet time. It may be the inevitable trade-off between the advantages of the bit-mapped screen and speed of response but if that is the case it would be more bearable if we knew that was the choice we had made.

John Tanner,
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Bristol BS9 4HL.
Tel; (0272) 623401 .

MONITORING THE MONITORS

I would firstly like to thank all of the QUANTA readers who responded to my article on the Computer One Monitor. I would like to take up your suggestions: i.e. comparisons etc. in this article. I hope it will pave the way for an informed debate on monitors in general.

I would like to thank Tony Tebby for sending me his QMON and Paul Ives for sending me the pre-release version of Computer One's V2.02 Monitor. In appreciation of this I will start the ball rolling by comparing these two excellent programs.

QMON by QJUMP

QMON is supplied on a cartridge (or disk) containing QMON, QMIN (a cut-down version of the Monitor) and two extensions for your use and study, using QMON. The manual is a mere 26 pages and an errata sheet; this needs very careful reading.

The program follows very closely Tony Tebby's philosophy as stated to me. Namely to get all the necessary control commands which include a single line assembler as an absolute bare minimum. He also points out that a move memory command is unnecessary, as he has never had occasion to ever use this command.

Now follows a summary of the commands.

QMON is a resident command and so is loaded straight into memory, it is up to you to invoke it with the command QMON or QMON <device> <filename>. There are five variations of the execution command (GO) some straightforward some conditional, all are adequately explained. There are six trace commands (T) (optionally to a user channel) single stepping and conditional. All are essential and work very well. In addition to these trace commands there is a set of quick trace (Q) commands, the options are similar to the trace command. There are also two trace recall (R) commands and two trace levels. LU traces user mode code, and LS which traces supervisor mode code as well as user code, both very useful.

You may toggle break points (B) as well as clear all breakpoints (BC) very easily. The normal display modes are all easily accessible i.e. (D) Hex and ASCII, (DI) disassembly, (DR) display registers and the option to continue any of these <ENTER>. You may easily set bytes, words or long words in memory, set stack pointers status registers and the program counter. There is also an option to modify memory in bytes, words, long words and to modify instructions in memory, i.e. single line assembly. There is also the necessary find string command, both singly and with conditions.

But to my mind the crowning glory of QMON is the edit memory option; it is simply a joy to use and simplicity itself, I cannot praise this enough. There is also a channel control system which (to my mind) seems very limited, as is the calculate address option. The macro command seems a very good idea but is poorly explained, but once understood can be very useful. There are several commands, mostly conditional, to help with the macro command.

All of these features fit into approx 7K, an amazing feat of programming. An excellent product well worth buying, an out and out no frills Monitor/Debugger. A pity it is not contained in the QL ROM.

Computer One Version 2.02 (Pre-Release)

This to my knowledge is a unique Monitor, as it goes far beyond what you would expect a Monitor to be. For a start it has both a Monitor and a simple assembler in one. In other words it has not only single line assembly but also multiple line assembly.

The Monitor contains all of the features that its predecessor had. These are as follows.

The Monitor is loaded as an Exec'able job and so is constantly at your command simply by pressing CTRL C.

If you press the h key an onscreen help facility will enable you to see the commands available. One of it's greatest assets is that you may load or save directly from the Monitor. This, I find, is a far more efficient way of loading/saving code. You have complete control over the channels, ink, paper, border and strip features. The windows are completely user definable.

Other commands are in display mode, Disassembly, dump and register dump and a very useful refresh mode to clear the screen. You also get complete job control(with a job-id printed on screen). You may suspend jobs, change job priority and release jobs and ultimately kill individual jobs with very clearly explained commands.

You may of course trace jobs, either single-stepping or by using conditional tracing. Likewise, it is easy to set breakpoints anywhere in the program and also just as easy to release them. There is also a very useful command called watch, its purpose is to watch for a specified location or address or in a range of addresses in a specified range. A very useful (essential) command is heap which allows you to allocate space to a particular job;important, for there may be more than one job running. Another very good idea is that of queue tracing, i.e. tracing round a queue of addresses and outputting values every 8 bytes.

You may also use flags to set the default for values on all subsequent commands. There is also a function called eval whose action is to evaluate an expression in any base and outputting the value of a number in any other base. You may move memory and if you do so you can then compare memory using the two commands available. There is the inevitable find command, of course, this has some very powerful options available to it.

Then there is, of course, the alter memory commands, these are;poke_b, _w, _l. All of these work very well and efficiently. There is also a command "." Which is an alternative to poke, but you are much more likely to use this on the registers. There is also a command called clone the actions of which are startling. You may set up (for instance) a constant display of registers which will update before your very eyes especially when you poke something. But seriously there are many ways in which clone makes for easier programming.

It is a simple matter to enter the assembler mode, you simply type \$ and you are confronted with assembly. Likewise to get back to the Monitor mode you simply type end and you are confronted with mon>.

In the Assembler mode there are three pseudo registers, current location (*), upper memory limit (***) and lower limit, i.e. on starting (**). These registers can be manipulated in the same way of other registers in the Monitor. As stated before it can handle single- or multi-line assembly. Single-line is very straight forward as you would expect.

With multi-line assembly many other commands come into effect. These are segment, which allocates a small area of memory. You may assemble from files by using the \$include option i.e. \$include mdv1_myfile_asm. To execute this you must put end for a two-pass assembly. You could then use mon>, job ?R0 to set the current activity. The assembler has an associated command "noass" which will set up all the symbols for a source file without actually producing code, so that the code produced with a standard assembler may then be loaded into the Monitor to be symbolically debugged.

There is an inbuilt symbol table management system; the Monitor/Assembler works with a multi-level symbol table. So by entering symbols k, it would list all symbols starting with k. Local labels can be used: @0 is shorthand for sym_0. The symbol table has three levels which are used for searches, 1 global, 2 local and 3 @ symbols. By using the local directive, a local symbol table can be created, allowing symbols to be entered at a local level. So you may enter "ass> local file1", this will enter file1 as a global symbol and will set file1 to be the current symbol table.

Within the Monitor, there are only two data types - value and address. However within the Assembler there are a number of data types as required for full 68000 assembly. Symbols in the Monitor can be created or altered using the = command. There is also an "off" symbol directive which tells the Monitor that certain sections of the table should be used as relative offsets to a particular register.

All this and much more, I simply have not got enough space to explain all the commands. This is a very powerful Monitor/Assembler/Debugger. I am doubly sure that this is the best, it is certainly unique.

As you would expect it takes memory to get all this, and this program is about 22K in length, which considering what is in it is incredible.

Conclusions:-

QMON is an excellent Monitor/Debugger which contains all the basic tools you would need. With the jobs extension included it is, I think, the best of the basic Monitors. It is small (7K), powerful and does all that you ask of it. As I said before it is a pity it is not built into the ROM. I would say if all you need is a powerful Monitor/Debugger then you will not go far wrong buying this.

The Computer One Version 2.02 (pre-release) is an innovative, powerful tool. I should explain that it is used on Computer One's OPD version of the same program. It's concept is new and exciting, it's content is bettered by nothing I have ever seen before. It is extremely easy to use, and it's power is undeniable. The feeling that you have everything that you need at your fingertips, gives you greater confidence. I don't think the memory aspect is a factor as most code is written in small sections anyway. If and when it is released I urge you to buy it, it is superb. This program certainly leaves all other conventional Monitors in the shade, and it is a vast improvement on the last Computer One Monitor.

Finally, I would like to say that both Monitors performed perfectly, and far from being a contest, it was a contrast. I think both programs compliment each other and I see no reason why both programs could not be in the same collection. I am certainly glad I have both of them. Where space is at a premium, QMON is ideal. Where the vast array of commands is necessary I use Computer One Version 2.02. Buy both and give yourself a treat. If I was forced to choose, it would have to be the Computer One Version 2.02 which would come out on top. The sheer scope of commands and it's versatility makes it unsurpassable.

If you need any more information on the Computer One Monitor, either contact me at the address below (send s.a.e.), Or Computer One.

Don Walsh,
22, Smithergill Court,
Heelands,
Milton Keynes MK13 7LT.
TEL:- (0908) 311619.

DIY CLOCK CARD

Is anybody interested in building a clock card for their QL? It's the height of laziness since it sets up the time and date automatically whenever the QL is powered up or reset. It also stores a short user set message ("Hi there Mega Hacker" etc). The bits to make the board cost about £28.

The software is 3K long and is in ROM, it works with JS and JM machines and disk drives - the Cumana Interface anyway - via an unbuffered expander. It also works with QUANTA internally modified 640K QLs + disk + ICE ROM. It does not seem to work with Miracle Systems' 512K card and disk but it may work with the RAM on its own - full tests have not been made. This last point stopped QL World from publishing details of the card but it seems a shame to let the effort go to waste.

Complete details, as ready for the magazine, are available on how to construct the card + ROM dump, all in 25+pages for £1.30 - this is the photocopying price. For £6 a preprogrammed 2732 EPROM will be included. The instructions are aimed at just above the electronic dunce level so don't be put off.

By the way I'd be interested in swapping a ready made example of the card for somebody else's hardware handiwork - an EPROM programmer or RAM card come to mind. It's a long shot but I also collect tin and clockwork toys..... Have you looked in your lofts lately?

B. S. T. Marriott,
79, The Myrke,
Datchet,
Slough,
Berks. SL3 9AB
Tel:- (0753) 35195

I/O VIA THE NETWORK PORT

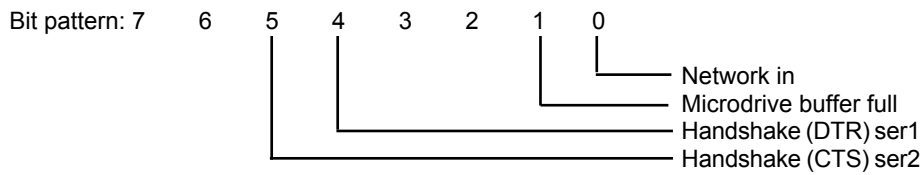
I have found a way to access directly the network port. This facility is needed if one wants to decode Morse signals, RTTY, etc.

Name of the port: PC.IPCRD

Decimal address: 98336

Hex. address: \$18020

(read only)



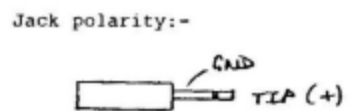
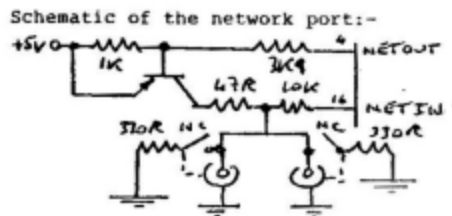
Usage of the IPC port (read only):

The handshake lines, namely bit 4 (ser1) and bit 5 (ser2) will be set if the opposite side is not ready.

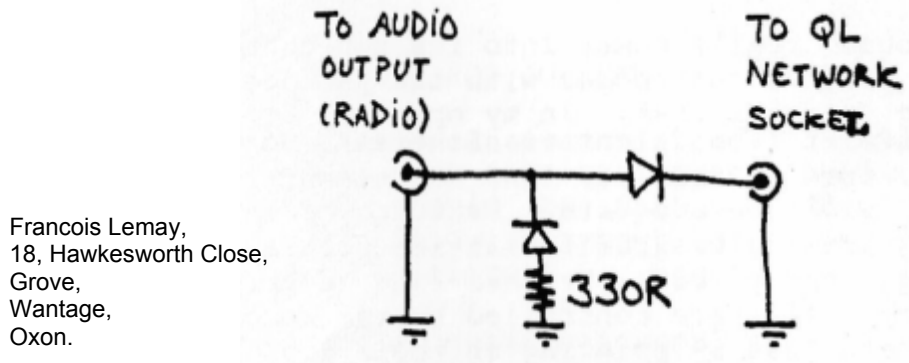
Bit 1 will be set if the Microdrive internal buffer is full.

The network port can be read as bit 0.

When a jack is inserted, it opens a connection to a 330R resistor, disconnecting it from the circuit. With a network setup, the terminating impedance is normally 165R. If only one QL is connected, the terminating impedance will be 330R. If a circuit requires TTL input, plugging another jack into the unused socket will disconnect the pull-down resistors completely.



Note that it is probably safer to use blocking diodes if the audio output from a shortwave receiver is connected directly to the QL port:-



QUILL PRINTER DRIVER UPDATE

Members who have used my modification to their Quill boot program to give a choice of printer drivers at startup may like to know that drivers can also be changed within Quill itself. Simply "backup" the required driver as "printer_dat" using the files command. The keypresses required to select A4 paper in my example are

<F3> O F B MDV1_A4_DAT <ENTER> MDV1_PRINTER_DAT <ENTER> Y

John Attwood,
22, Wilcot Avenue,
Watford WD1 4AT.

EIDERSOFT MOUSE

The mouse plugs into the rear ROM port of the QL via a small black box (dimensions approx. 2.5 * 1.5 * 0.75 inches). From the left hand side a lead emerges which, according to the instructions, should be fed under the QL. The lead then enters the mouse itself from the top. The construction of the standard mouse is alright but it does feel a little light. Having used both this version and the newer, English made, Penny and Giles version, I would wholeheartedly recommend the latter because it has a much more sturdy feel to it altogether.

Movement of the mouse is transferred to the pointer on the screen by means of a small rubber coated ball which is inserted into a hole on the under side of the mouse after removal of a cover. As the mouse is moved the ball rotates and this movement is picked up by three rollers in contact with the ball. The mouse has three buttons, the outer ones "single click" and the middle one double clicks both within ICE and ARTice.

The mouse is first of all the means by which the pointer is moved around the screen in ICE and as this has been well reviewed in previous issues of QUANTA I have no intension of doing so again here. It will suffice to say that the pointer movement is much smoother and faster under the control of the mouse and now means that the use of the calculator is a possibility. I wish that Eidersoft would introduce one with more features.

The mouse really comes into its own though when used with the ARTice program that comes with the package. This is an excellent drawing program that, in my opinion, compares very favourably with QLPaint from Talent via Sinclair. Screens, when saved can be loaded into QLPaint for fine adjustment if required but normally ARTice will be adequate. Features of the program include the normal drawing program facilities such as circle, line and box drawing, spray can, brushes and a very neat cut and paste facility. All are controlled by the mouse and accessed from the main menu just by pointing at their icon and clicking. Movement of the cursor is fast and very accurate.

Documentation contained with the package is concise and informative and takes the first time user well through the setting up and use of the mouse, ICE and ARTice.

As can be inferred from reading this review I am most impressed with the mouse and feel if anyone is interested in obtaining one then I can recommend the Eidersoft version. Eidersoft have let other software manufacturers have their mouse and hope that other software for it will be available in the near future. Eidersoft themselves are set to release a couple of new programs in the near future, one for desktop publishing titled "The Presenter" and a second for setting up icons for use with Quill, Abacus and others and will come with a print spooler. I look forward to their release and hope to review them when they are available.

If anyone has any questions on the package they feel I may be able to help them with then do not hesitate to contact me on Bishop' s Stortford (0279) 722033.

Overall a good package if you can afford £89.95 or £69.95 if the ICE ROM is traded in.

From:-

Eidersoft,
Hall Farm,
North Ockendon,
Upminster,
Essex RN14 3QH.

Philip Chaplin,
30, East Park,
Sawbridgeworth,
Herts. CM21 9EX

MEDIC CASES

David Storton has acquired a supply of Medic cases. For further details contact him on 01-671 0209. He also has a couple of Medic interfaces for sale.

Leon Heller

PRINT QUALITY FOR JOURNALS

"Our fully computerised system can electronically "read" manuscript into our computer, thus eliminating the keyboard step.

The manuscript submitted should be the original not a photocopy use one of the following typewriter elements:OCR-B (preferred),prestige, pica, courier 10.....etc."

The above requirements for a scientific journal pose a problem for anyone using a computer to write for publication. Before,the text had to be readable by a person, it now has to be readable by a machine, which is probably much more fussy. When choosing a printer - **think**, will the output be of adequate quality? Because if not there is no way anyone is going to sit down and type your prose into a machine.

I am not sure if NLQ is adequate but an OCR-B wheel on a daisy-wheel printer should be. The print quality on a Bother HR-15XL using this type of wheel and a single strike ribbon is excellent,to the untrained human eye at least! The fall off in quality with a multistrike is minimal. This printer also works with Quill (Miracle interface) with no alteration in the default dip-switch settings required.

The need for very high quality printouts by publishers is going to become more widespread. Users of the Amstrad PCW computer which can only easily interface with its dedicated dot-matrix, and users of the Mac with its limited range of printers might have problems in the future.

Dr John Heckmatt,
17, Cleveland Court,
Kent Avenue,
Ealing,
London W13 8BJ

/ An electronic journal I used to be involved with could also accept input via a serial port (most people used a modem), apart from the OCR input, which was only intended for those people who didn't have access to a computer - an ordinary electric typewriter could be used. I feel that OCR will become less popular in the future as most people will have computers and modems . LFH */*

THE SWEDISH QL GROUP

We started our Swedish Group in the beginning of 1985 and we now have about 190 members. New members are joining every day, at a rate of almost one every two days. We have regular meetings on the second Saturday in the month (except for summer months) in Goteborg. At the meetings we look at new programs (copying of commercial programs is not allowed), new hardware, and new issues of QL World, QUANTA and other magazines writing about the QL. In the spring we gave a course on SuperBASIC, and for this autumn we are planning a course in assembler programming on the QL.

We also plan to give a short seminar on the four Psion programs during a weekend in October (the second Saturday in Goteborg) together with our AGM.

Some of our members also write programs that we have included in a "Swedish library". Some of the programs have been sent to the QUANTA library. Some of the programs contain too much Swedish to be "exported" to you, but they may be translated later (time permitting...).

We distribute a newsletter to our members as well. At least four issues (or more) per year. At the moment we are unable to send out more issues of the newsletter, because of the lack of response from most of the members. There are two or three persons at the moment writing almost all of the newsletter. More letters (and programs) from members, please. .

You can join the Swedish group - Svenska QL Gruppen - by putting 100 Swedish crowns in Postgiro account 62 81 58 - 8 . State your name, address and telephone number on the payment slip, and you will get all of the numbers of the newsletter for the year you pay for.

We also try to answer members questions. With a special Swedish version of the QL, but not of the manual or the Psion programs, there are lots of questions . . .

If someone wants to write to the group, our address is:-

Svenska QL Gruppen,
Toftasgatan 73,
421 47 V:a Frlunda,
Sweden.

Johan Boman,
Molndalsvagen 7,
S-412 63 Goteborg,
Sweden

LIBRARY CORNER

Fame at last!! We've had one of the library programs reviewed in QUANTA. Pity we had to leave it to the Chairman to review IBMDISK, but at least it is a start. I look through the programs reviewed in QUANTA and often wonder what they have got that is missing in the library. Take a couple of current examples. What makes Pyramide OTHELLO so much better than Mike Finley's version on Lib_10 and how does Qlfont compare with Sign Designer? (I have not seen either of the commercial programs). When we review a program in QUANTA can we do a comparison with similar programs held in the Library? Our authors are not averse to constructive criticism and your comments may help to improve the library.

We received a new program today from Tony Towers, Qlad1_bas. It has gone straight off to Brian Davies for vetting without me running through it but it is a fair bet that by the time you read this it will be available from the library. Can we have a little competition to see who can write the most accurate review to be published in QUANTA. Tony is only a little fellow and is unlikely to become violent if he does not like your article. As an incentive, the winner can retain the program for the commercial price of £19.95 instead of the usual £1.00 option.

On a more serious note, I expect to be at the PCW show and to have copies of the library with me. However, the main idea of attending the show is to increase our membership and we do not want to be in the position where prospective members cannot be dealt with because of a queue of members waiting for library updates. We will happily copy any programs you want if time permits and we will be more than happy to see you, but it will help if you can obtain your programs from your sub-librarian either before or after the show. I will be bringing all the sub-librarians up to date by the end of August so if you obtain your programs from them perhaps we will have time for a chat at the show.

We have come across instances of library programs being copied for non-members. It is a condition of the library that programs are for members' personal use and will not be passed on to any other person, including any other members. If you are giving away even the free programs to non-members you are putting up your own and everybody else's membership costs.

I have made one minor change to the sub-librarians recently. Because of the increased demand from overseas Jerry Tressman will now be concentrating on this aspect with myself, and U. K. Members should use one of the other sub-librarians if they are providing their own disks. If you require disks to be supplied, Jerry can still obtain them for you. I have plenty of cartridges available should you have difficulty obtaining them.

Syd Day,
241, Highfield Road,
Romford,
Essex RM5 3AW.

A SWEDISH QL AND THE MGS ROM

Just one and a half years after the QL was released in England, a Swedish version of the QL has recently appeared. The hardware is exactly the same as on the German version, i.e. real Sub-D connectors instead of the BT plugs of the English version. The computer is also screened internally (My AH QL is not). The keyboard is designed a little differently: the shift and caps lock keys have arrows instead of text on them. Some of those curious characters that you access with CTRL-SHIFT are directly available by just pressing one key. The German keyboard is modified to the Swedish standard with some stickers.

When it comes to the software and the documentation, neither a Swedish translation of the PSION suite nor the user guide are currently available. However the computer contains a modification of the MG ROM. Andy Pennell mentioned this ROM in QUANTA 6/85. The Swedish version is named MGS and it contains QDOS version 1S13.

The MG ROM is designed for foreign countries. Therefore it is designed so that you only have to replace the upper 16K of ROM to adapt your machine to your specific country. Apart from the Swedish error messages there are some other things that may be of interest in this ROM:

The TRA instruction and trap £\$01 with D0 = \$34.

The TRA instruction (and the corresponding trap) can be used for three things:

- 1) Turn translation of serial input/output off and on
- 2) Add a new translation scheme
- 3) Add a new message table with all sorts of messages

TRA 0 turns translation off and TRA 1 turns it on.

TRA address turns the translation on and uses the translation scheme at the address specified. The address of the default-table (TRA1) is found at \$146 (SV.BASE) or at \$0BFE2 in the ROM. If you want to create a new translation scheme, look at the default one in the ROM first.

Adding a new message table is very complicated (and useless).

At \$0BFE2-\$0BFFF there is a table with some vectors and addresses that may be of interest:

\$0BFE2 Address of translation table
 \$0BFE6 Address of message table
 \$0BFEA Vector of input-retranslation
 \$0BFEE Vector of output-retranslation routine
 \$0BFF2 Vector of keyboard routine (?)
 \$0BFF6 "1S13"
 \$0BFFA \$0003,"MGS" (VER\$)

Some new system variables are also included. (Around\$144 (SV.BASE))

However, none of the new facilities mentioned above are documented and should therefore not be used for other than personal use. My information is as a result of studying a ROM listing, so some of the things above may be removed or altered in later versions of the ROM. If you want to know more about the MGS ROM or if I am wrong in some aspects, then contact me.

Fredrik Zetterlund,
 Klyvsaagsgatan 25,
 S-416 79 Goteborg,
 Tel:- 46 31 84 35 67

CAPS LOCK SOUNDER

The following routine will produce a high note when the Capslock is toggled on and a low note when it is toggled off as requested by John Roberts in the June issue of QUANTA.

```

100 REMark *****
110 REMark * CAPSLOCK SOUNDER*
120 REMark * D. I. Stevenson 1986 *
130 REMark *****
140 CLS:PRINT "Caps Lock Routine";
150 r = RESPR (16)
160 RESTORE
170 mload r + 4
180 CALL r + 4,48,r
190 h = PEEK_L ( r )
200 mload h
210 s = 164002: REMark SV_CSUB
220 d = h-s-2
230 if d>32767 THEN PRINT "not installed" - heap storage too far : STOP
240 POKE_W s,20085: REMark RTS
250 POKE_W s+2,d: REMark displacement
260 POKE_W s,24576: REM BRA
270 PRINT "installed"
500 REMark *****
510 REMark * Machine code loader *
520 REMark *****
530 DEFINE PROCEDURE mload (addr)
540 LOCAL a,x,c
550 a = addr: c = -1
570 REPEAT loop
580 READ x:c=c+x+1
590 IF x<0 THEN EXIT loop
600 POKE a,x:a = a + 1
610 END REPEAT loop
620 IF c<>0 THEN PRINT "not installed" - checksum error": STOP
630 END DEFINE mload
1000 REMark *****
1010 REMark * Get heap storage *
1020 REMark * D1 - length *
1030 REMark * D2 - Reply address *
1040 REMark *****
1050 DATA 40, 66, 116, 0, 112, 24, 78, 65
1060 DATA 40, 136, 78, 117, -884
2000 REMark *****
2010 REMark * |Caps Lock subroutine *
2020 REMark *****
2030 DATA 72, 231, 197, 16, 71, 250, 0, 24
2040 DATA 16, 57, 0, 2, 128, 136, 68, 0

```


2050 DATA 23, 64, 0, 6, 112, 17, 78, 65
2060 DATA 76, 223, 8, 163, 78, 117, 10, 8
2070 DATA 255, 255, 170, 170, 0, 0, 0, 0
2080 DATA 0, 8, 0, 0, 1, 0, -3321

David Stevenson,
351, Maidenhead Road,
Windsor,
Berks. SL4 5SE

QL OVERHEATING

With the hot weather in the 90's recently, I have experienced major problems getting my QL to keep going for more than about 15 minutes at a time. In desperation, on a very hot Saturday (and on my way to the beach!), I bought a mains driven fan from a radio ham shop. This is a Radio Spares component, designed to vent quite substantial equipment I should think (RS No:- 507 - 397 £20) and is rather large 4" X 4", but was the smallest (the only) mains driven fan I could find.

I placed the fan on the left side of the QL, drawing air from the left expansion port which was already open because of memory expansion, some cardboard came in handy to direct the air flow. The fan is quite quiet and is more practical than one of the large rotating fans designed to ventilate a whole room.

This manoeuvre has been very successful in preventing hang-ups and I have had the QL on for several hours without problems.

The hang-ups were not just related to the Microdrives, clearly there are some other heat sensitive components within the QL. If other members have not had problems then of course it could be the PCML memory expansion. The implication of this over-heating is that I would be inclined to shy away from any computer using the QL board which did not have a fan.

John Hekmatt,
17, Cleveland Court,
Kent Avenue,
Ealing,
London W13 8BJ.

NEW PRODUCTS

Emmesoft in Italy have an interesting program called "Wave", which displays, in real time, the waveform of an FM synthesiser (like the Yamaha DX7). You can also display 3-D modulation (as on the Fairlight) over time and sidebands of the analysed sound.

The only inputs required are output level, ADSR and operator's frequencies,

"Wave" costs 99,000 Lire from:-

Ernmesoft,
Via A. Albertinan, 29,
10123 Torino,
Italy.
Tel; (011) 87.83.68.

Sandy/Farmintel have a kit available that makes your QL look like a "proper" computer, with separate PC-type keyboard, case with space for disk drives, switch-mode power supply, interfaces etc.

Details from Sandy on (0234) 219814.

FOR SALE

For sale or swap: Serial 8056 compact printer (50 cps) plus RS 232 lead and roll of paper (unwanted present - brand new). Cost £136.00. Will sell for £90.00 or swap for RAM extension board or disk drive.

Don Walsh,
C/o Leon Heller,
Tel:- (0908) 564271.

NUCLEON BY PYRAMIDE

This package is advertised as a "programming assistant". There are four main programs, each of which can be requested to produce its own main program at the end. The main four are Compact Draw - a simple drawing program, Characters - a font definer, Windows - a window definer and maestro - a program for putting together tunes. A fifth program is included to tie all the parts together by means of a boot creator and this part, The Integrator, also acts as a file manager.

At first glance the package may seem to be a collection of four separate programs put together to make them marketable. On closer inspection it is more than this. Each program is useful and when put together the programmer is only limited by his imagination.

Compact Draw is simple but it would be useful for producing drawings or diagrams in programs. It lacks the sophistication of more advanced drawing programs such as ARTice from Eidersoft or QLPaint from Sinclair. This is to be expected because it is only one fifth of the package. The BASIC that is produced is good as it redraws the screen quickly one component at a time.

Characters - the Font Definer, allows old character sets to be modified or new ones to be created. This is all done on screen in a fast and efficient way. The screen layout is clear and the sets once complete can be saved for use in later BASIC programs.

Windows allows a screen layout to be defined or modified. Options include the size and location of windows, their ink and paper colours, stipples, borders and finished layout, they can have shadows added. Again, a BASIC program can be generated for use later.

Maestro is the tune definer of the package. They are tunes rather than music because of the limited nature of the QL's BEEP. The notes can be altered for pitch and duration and are defined on staves. There are comprehensive editing facilities and the tunes can be played before finally saving the BASIC. The screen layout is impressive and there is good use of windows.

Integrator is a file manager and works well, but it's main advantage is it's easy to use Boot generator. By following a series of prompts a boot, or other named program, can be produced which ties all the parts of a program together.

The package is impressive after a short period of introductory use. The packaging is good but the manual is slightly unclear at times. The manual needs, at first, to be worked through with the programs rather than the other way round. After a time though the parts all fall into place.

Overall, Nucleon is not bad value at £19.95 and can be obtained from:-

Rio Promotions Ltd.,
28, Waverley Grove,
London NP3 NPX.
Tel:- 01 - 349 2764.

Philip Chaplin,
30, East Park,
Sawbridgeworth
Herts. CM21 9EX.

THE FUTURE OF QUANTA AND THE QL

Having just joined QUANTA for another year I thought it might be interesting to suggest how we as a group might change, (or evolve!) Over the coming year.

Obviously the main item must be the sale of Sinclair Research to Amstrad and the "death" of our QL Computer in the resulting takeover.

This narrows the future directions of the group to three basic scenarios, these are laid out as follows:-

1) Those owners who have invested in a complete QL system of monitor, RAM memory and disks etc., find that the second hand value of their system entails too much of a drop in value to sell quickly, and thus these people will be using QLs for a good while to come.

2) Other owners might be on the verge of buying such peripherals for their "basic" QL, but are now wary of further investment in a machine that is no longer made/supported by its manufacturer.

3) The final choice will be those who desire a new system, and will either trade their old QL system in for an Amiga, ST or whatever, or they will sell their computer at a loss in order to fund their next system.

What can we, as a user group, learn from these scenarios that will enable us to plan ahead?

The main thing that comes out is that we "DON'T PANIC" in the words of the Hitchhiker's Guide to the Galaxy, and check each of the options for their actual impact on us, rather than any emotional response we might feel.

Taking option 1) to start with, (see how using a computer gives on a logical mind!), It is likely that a fair number of users are in this position, particularly as the QL was aimed at a "professional" level, and the lack of extra memory and disk drives were all that was holding it back from becoming a professional machine.

This option makes good economic sense, as the initial investment in this extra technology will only pay for itself after it has been in use for a certain length of time. Selling before this date will only condemn good machinery and money before its normal length of time is up. If it is doing a good job of work, i.e. satisfying the demands made upon it by its owner, then the QL can keep working, as the sale of Sinclair will not cause their machines to self-destruct!

These members will have a detailed knowledge of their machine and its capabilities and limitations, and will also be likely to buy any new software that is developed.

Option 2) will also involve a large number of users who, having bought their QL in a burst of enthusiasm, (or optimism), are now looking at ways of making it become a "proper" computer. The Microdrives are one weakness of the machine that soon comes to light if it is used a lot, and thus extra RAM and/or disk drives are very high up the list of desirable add-ons.

Again, should the owners of the QLs try to sell them they will lose out on the deal, yet they may feel that buying "extras" is throwing good money after bad. I would suggest not for two very good reasons.

The first reason is that the cost of upgrading the QL to a full spec., Is less than that involved in selling it to buy one of the new "32 bit" (sic) computers that are now coming on to the market.

The second reason is that these machines are still being refined and developed as is their software, anybody reviewing the software scene for the QL is aware of how it seems to have exploded during the past few months, ironically during the QL's death throes the software for it is now at a healthy level, with more graphic packages than the number of days in the week, or fortnight even! Thus it would pay to bide your time until the customers of Atari, Commodore and the rest have done the valuable "Bug detection" work, similar to that undertaken by early Sinclair QL owners!

This brings us to the final scenario of owners who wish to "trade-up". Obviously you can't stop people selling if they wish to, nor would we like to stop them in any way, of course. However the possibility of other firms offering to "part exchange" your QL for another computer would seem to be the best option. If the new computer is based on a QL, or is QL compatible such as the CST Thor or Tony Tebby's new machine, then so much the better, as this enables such a computer to join an already established software base, (and user group!), Which is something the Amiga is sadly lacking at this moment, according to the press reports, anyway.

The timescale for each option might be as follows:-

Option 1). At least a year or so, perhaps even longer if everything is working OK.

Option 2). If owners do decide to invest in disks and extra RAM then they are also likely to keep their computer for at least a year, probably more.

Option 3). Alas this must come to us all in time, as our QLs cannot keep going forever. However, would think it might be several years before we see a mass desertion of QL owners to the "new 32 bit" machines. They might even keep their QLs if there is no trade-in offered for them as I cannot see a market for second hand QLs in several years time, any more than there is one for ZX81s at the present time.

Where does all this leave QUANTA? I believe that there is still plenty of life left in the QL and QUANTA for quite a while to come. As mentioned in the last newsletter, with the collapse of Sinclair and the disinterest of Amstrad, many owners are now joining QUANTA, and irrespective of the actual QL being made any more, the hardware "add-on" merchants still have stocks to sell to all those QL owners who wish to upgrade.

One item that seem insatiable is the appetite for new software. Here there seems plenty of room for growth as there are now plenty of QLs about, although it would be useful if we knew which RAM extensions the various items of software would, or would not, work with. Here again, if any of these "new" computers are QL compatible this might act as a spur to software companies as well as benefiting those owners of the "older" QLs.

We already know that QUANTA is keeping in touch with the various QL based computers that are being developed in the wake of Sinclair's disappearance, and this bodes well for the short term.

This leaves us with the future, which is bright at the moment, but could be dim in the next few years. However, it would be well to remember, that in this business a few years is a long time. Every time my QL is switched on the copyright date is 1983. If you cast your mind back to that date, you can realise that such machines as the Amiga and ST would have been hardly conceivable as home user machines then, and no doubt they shall be replaced as well, in a few years. Incidentally, in some of the American computer mags, they are already discussing the new Amiga 2 which is due to be launched this September, closely followed by the new Atari ST with "Blitter" chip and lots of other goodies as well.

Thus, I believe, that the QL is a good plateau on which to rest for a while. It is true that technology marches on, but to attempt to keep up is like climbing a waterfall, no matter how hard you try, you can never make it to the top.

If we can influence the new QL based computers at all, could we see if they include a MIDI port(s) as standard in a similar fashion to the ST. As the main reason my QL will go is to provide me with a computer that I can use as a sequencer or Music Editor as I explained in my last letter. I have thought of getting a MIDI port made for the QL as kindly offered by Don Forbes, but I wonder if you know of any firm that is likely to make one for the QL? As I fear that the lack of software will seriously limit the amount of use I can gain from this MIDI "add-on" to my QL.

This month's issue of "Byte" Magazine includes a special on computers and music. It's very interesting seeing how the other half live with their Macintoshes, Amigas and Atari STs etc!

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30, King Edward Street,
Barnstaple,
N. Devon. EX32 7BE.
Tel:- (0271) 75763

/* I suggested a MIDI port for the QLT to Tony Tebby, and it has been included in the latest spec. LFH */

TALENT COMPUTER SYSTEMS' ASSEMBLER WORKBENCH

The Assembler Workbench by Talent Computer Systems is a very impressive piece of programming. It consists of an editor, a monitor, an assembler and an online help file. The latter feature is the poorest aspect of the package, being little more than a reference file (albeit 46K of a reference file!). It comes on one Microdrive cartridge accompanied by a card containing info on how to backup the cartridge, how to load the progs and how to get a printout of the help file.

Calling up the directory the cartridge gives the remarkable message 0/255 sectors and repeats the instructions on how to duplicate it. This is achieved by `exec_w mdv2_backup_exec` and takes approx. 10 minutes. I tried Bob Sherratt's fast copy prog but it could not cope with the dummy files used as messages in the directory listing.

A boot program is supplied to load the editor and the monitor but they can be loaded separately by `exec_w` and `exec` commands respectively. The master cartridge is checked whenever the monitor is loaded and the help file is expected to be in MDV2_ if help is to be called.

The Editor.

This is a 6K multitasking prog which simply adds a new word EDITOR to SuperBASIC and then suspends itself! Files are opened from BASIC by commands such as:-

```
EDITOR MDV1_test_asm
Or EDITOR test_code
```

The former will load `test_asm` from `mdv1_`, the latter will create a new file called `test_code`. A plethora of editing commands are supplied. Some are immediate commands involving the cursor keys and allow movement anywhere and deletion of characters, words or the line to left or right. Others are extended commands, accessed by pressing ESC (when a command input window appears) which allows saving, searching, block moves, copying, deleting etc. Operations are pleasingly fast. A search for a string known to be almost at the end of a 48K file took 3 - 4 seconds. Entering a `q` in extended mode quits the editor and releases all the memory used.

Since EDITOR, like any good superBASIC word is re-entrant, more than one edit file can be open at a time. This not clearly explained and confused me at first since my previous experience with editors is limited to Quill, Tony Tebby's `Sedit_bas` and the like where one file at a time is the rule. The advertisements contain the phrase FULL SCREEN EDITOR (RAM OR DISK) implying (to me) that, like QUILL, it can handle files larger than will fit into memory. This is not so. All files are memory based. However, as a bonus, they are treated as independent jobs and devices. This means that if you have loaded (and perhaps edited) a file `mdv1_test` (or `flp1_test`) almost all further references to this file are directed to the RAM based copy, not to the MDV or disk master. Thus "copy `mdv1_test` to `CON_`" will copy to the screen without an mdv access. Delete of course applies to the original mdv or disk based version.

Attempts to load a file larger than available memory produces a FILE TOO LARGE message but as much as possible of the file is loaded. The maximum line length is 132 characters. Loading a BASIC prog with longer lines than this gives no error messages but the long lines are truncated. With the monitor also in memory I have loaded files of 48K. When the assembler is also loaded, about 35K is still available for files.

Finally, m/c progs or routines can be loaded as a hexadecimal file and used for RAM based operations (LBYTES, etc) but cannot be edited.

The monitor

This part of the package, another multitasking prog, serves not only to help in debugging m/c progs but also, given the multitasking abilities of QDOS, to load and control m/c progs as independent jobs. Commands can be entered in full or as the first three letters of the name.

A full set of job control commands is implemented along with commands to allocate and deallocate space on the HEAP. M/c routines and progs can be loaded or saved via familiar commands such as SBYTES, LBYTES, SEXEC, EXEC and CALL which have more or less the same function and syntax as in SuperBASIC. LJOB loads a job into the Transient program area. Memory can be searched, moved and edited.

Good use is made of windows. Separate windows are used for output of disassembly (Dasm), Hex dumps, register values and command input. The Dasm and Hex Windows can be one of two sizes and each can be split into two halves in order to compare output from different parts of a prog. Output from these windows can also be directed to any QDOS device, including of course, (RAM) files created by the Editor. Up to 20 break points can be inserted into a m/c prog and any m/c prog can be stopped by pressing Esc (in theory at least). Tracing gives disassembler output, a display of register values and an optional dump of a specified area of memory at each step. You can single-step through progs by pressing Space or toggle continuous running on/off via the F1 key. Disassembly and Tracing can be interrupted at any stage to issue other commands and then recommenced.

When any prog is loaded the base address is given. Five user defined function keys (Shift+F1-F5) are provided and it is suggested that they be used to memorise these addresses since they may be required for disassembly, saving etc. Functions to interconvert Binary, Hex and decimal values are included (numbers in the monitor are Hex by default, Decimal in the assembler). If working with progs with graphical output, a second screen can be setup (memory permitting) and you can toggle between, say, trace output and the screen output of the prog. The online help file can be called at any time. It is paged so that you can rapidly reach the relevant section.

The Assembler

This is loaded as a subsidiary job from the Monitor when first called. It is not the world's most advanced assembler (no mention of macros or conditional assembly) but it has its points.

The assembler is called via ADM (address) where address is the address the assembled code will start or is 0 if the code is to be sent to a file. A sample file called Demo is supplied on the cartridge (but is not mentioned anywhere except in the directory).

Thus a typical sequence would be, beginning in SuperBASIC:-

EDITOR mdv1_Demo	load the Demo file
EDITOR Demo_code	create a new file for the output
CTRL+C	into Demo_code
CTRL+C	into mdv1_Dem.o. Do any editing
CTRL+C	into the Monitor
ASM 0	call the assembler (output to a file)
OUT DEMO_code	output will go to Demo_code
IN mdv1_Demo	source to be assembled

Assembly then follows in two passes without mdv access and is instantaneous for the short Demo file provided. The resultant code can be saved by entering the Demo_code file (more CTRL + Cs) and using the Editor commands. You exit the Assembler to the Monitor by answering the ASM prompt by pressing ENTER and you can reenter it again at any time from the Monitor by entering ASM.

The Assembler uses standard Motorola mnemonics (it says) with “;” as the marker for a comment (not mentioned but apparent from the Demo file). Only arithmetic operations supported both in the Assembler and in the Monitor are + and -. As well as the normal assembler directives EQU, ORG, DC, Ds etc. LIST (Filename) outputs a listing to Filename. Similarly, a SYM directive generates a symbol table. IN (short for Include)(filename) causes the mentioned file to be assembled (see above) and can be nested in files to a depth of 3. I.e. you can assemble a file via the IN directive and that file can include another IN directive causing another assembly file to be read in and that file, in turn, can call another file by the IN directive. Thus several shorter files can be assembled as one large one. Previously assembled files can also be included via the LIB (filename) directive. Thus even with an unexpanded QL quit large files can be handled.

The Assembler can also produce code directly as you type it in and this is recommended as the quickest way of altering an already assembled file or of entering short routines.

Bugs

In the first week of use, I thought I had found quite a lot but all save one turned out to be due to my not understanding what I was doing or what the program wanted at a particular point. E.g. Editor files are listed as jobs in the job table called up in the Monitor by the JOBS command. I made the mistake of getting rid of unwanted files using the KJOB command. It works but the QL locks up if you use the EDITOR command again. Of course unwanted files should be removed via the Editor. Similar mistakes can be traced to the relevantly poor instructions.

My one remaining bug is that on a relatively few occasions the Monitor has locked up, cause unknown. The cursor flashes but no input is accepted. It is still possible to switch to SuperBASIC or Editor files and back to the Monitor via CTRL+Cs but nothing will go into the Monitor. The cure is to Kill the Monitor via a SuperBASIC Job control command if available, or else to load the Monitor again (don't forget the master cartridge) and kill the first version from within the second. No ill effects follow.

All in all a good product. Because it works in RAM whenever possible it is very quick to use. Better instructions and a card with the Editing commands would make it perfect for all but professionals.

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QL SPARES

I can supply most QL spares including the Service Manual.

Dennis Briggs,
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CORRECTION TO SUPERBASIC ALLSORTS IN JULY ISSUE

I'm very sorry, but I omitted an important part of Joe Haftke's article in the last issue. It should have appeared at the top of page 26.

```

11450 DEFine PROCedure PROMPT (WA$,NM$,PPP)
11452 Local WA,BL, S, I$, CC, DD
11454 CLS £0:PRINT £0;"ENTER ";NM$;" ";;INK £0,7:PRINT £0;WA$;;INK £0,0
11456 AT £0;0,LEN(NM$)+7:INPUT £0;I$
11458 IF I$="" :I$=WA$:ELSE WA$=I$
11460 NN$=I$:CC=0:DD=0
11462 IF PPP=-1:GO TO 11490
11464 FOR N=1 TO LEN(NN$)
11466 WA=CODE (NN$ (N))
11468 IF (WA<48 OR WA>57) AND WA<>43 AND WA<>45 AND WA<>46:NN$(N
TO N)=" "
11470 IF WA=46:CC=CC+1
11472 IF WA=43 OR WA=45:DD=DD+1
11474 END FOR N

```

```
11476 IF " INSTR NN$ <>0 OR CC>1 OR DD>1 OR "+" INSTR NN$>1 OR  
"- INSTR NN$>1 THEN  
114788 PRINT £0;"WRONG INPUT - IT SHOULD BE A NUMBER! TRY AGAIN."  
PAUSE 50:CLS £0:GO TO 11454  
11480 END IF  
11482 S= NN$  
11484 IF S>=100000 OR S<=-100000:PPP=1  
11486 S=INT((S+5*10^-(PPP+1))*10^PPP) /10^PPP  
11488 NN$ = S  
11490 END DEFine
```

Leon Heller

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PCW show 6th September Saturday. We have a hospitality room above The Hand and Flower Hotel, opposite the Olympia entrance, all day. The library will be there and also several traders . Ring for further details.

Edinburgh 20th September. We could have two cars going to this meeting. Passengers welcome. Ring for details.

Swindon. 17/18/19 October 1986. Presentations by traders - Saturday.

Archive with..... On Sunday . Possibly some time on SAGE Accounts. Ring for a chat.

Belgium 4/5 October 1986. Ian Johnson welcomes all UK Members. Ring for details.+

Birmingham..... November 1986..... TBA

London..... December 1986..... TBA